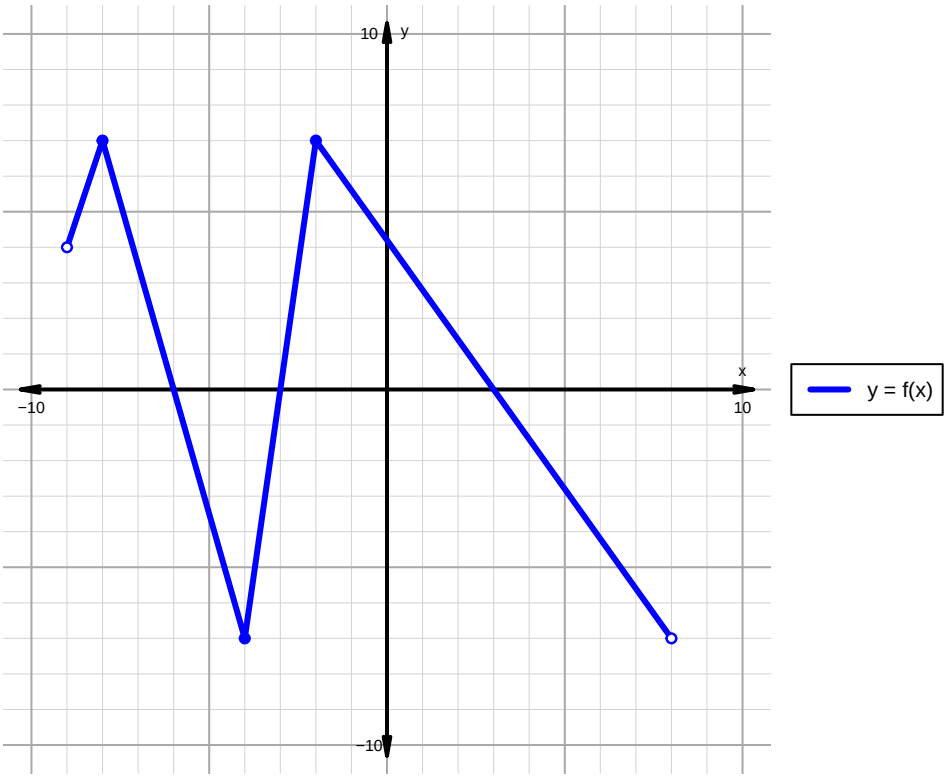
Name: Date:

Intervals, Transformations, and Slope Solution (version 155)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-9,-6) \cup (-3,3)$
Negative	$(-6,-3) \cup (3,8)$
Increasing	$(-9,-8) \cup (-4,-2)$
Decreasing	$(-8,-4) \cup (-2,8)$
Domain	$(-9,8)$
Range	$(-7,7)$

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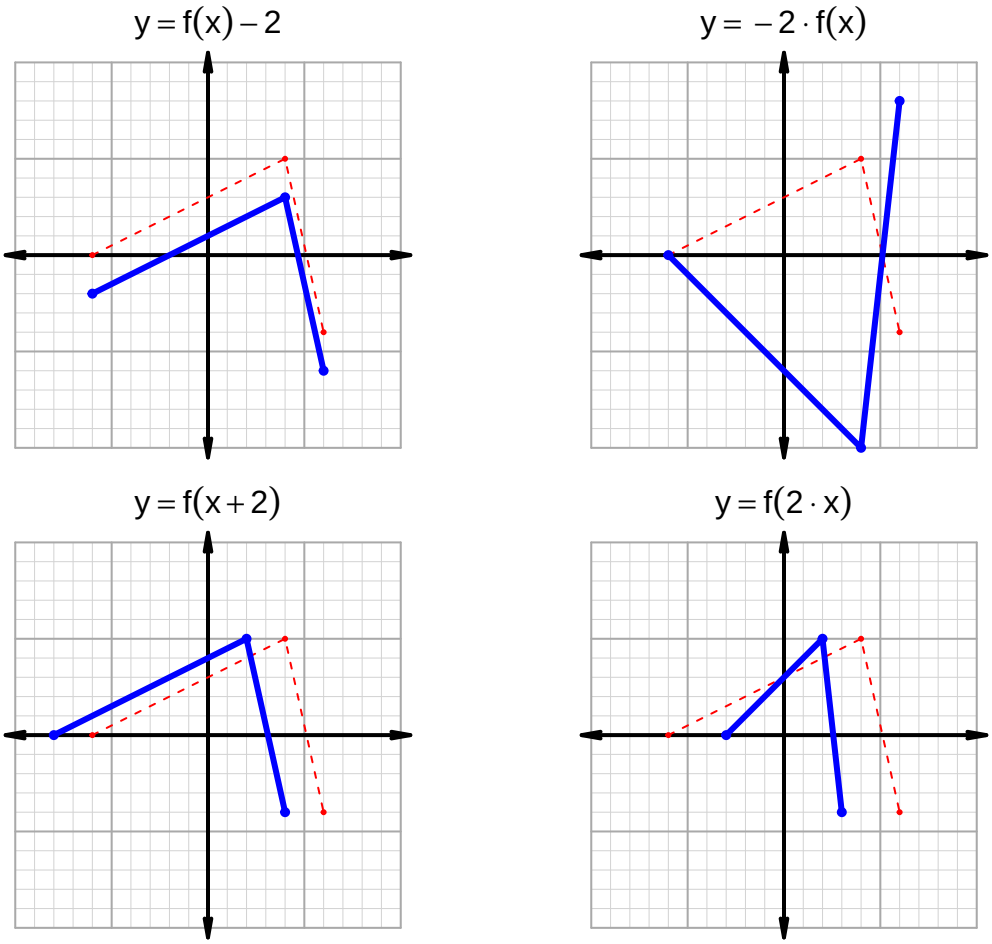
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 17$ and $x_2 = 62$. Express your answer as a reduced fraction.

x	$g(x)$
17	73
62	83
73	62
83	17

$\frac{g(62)-g(17)}{62-17} = \frac{83-73}{62-17} = \frac{10}{45}$

The greatest common factor of 10 and 45 is 5. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{2}{9}$$